URENCO’s Environmental Business on 3R in Hanoi City

Luong Thi Mai Huong

Hanoi Urban Environment Company
(URENCO Hanoi - Vietnam)
**URENCO** is the leading Company in waste management, treatment and environmental protection in Vietnam with more than 50 years of experience. URENCO is the biggest organization in charge of solid waste management in Hanoi city.

**FUNCTIONS:**

- Collection, transportation and treatment of domestic, commercial, hospital, industrial, construction waste...
- Night soil collection and public sanitary services,
- Design and manufacture of specialized vehicles and equipments for environmental sanitation,
- Engineering & investment consultation. Environmental impacts assessment services,
- Import and export materials and specialized equipments for environmental sanitation,
- Production and supply of compost for agricultural use, ornamental trees and clean vegetables plantation.
- Eco tourism, sport and entertainment development,
- Collaborate with other offices in education and propagation for enhancing public awareness of environmental protection.
<table>
<thead>
<tr>
<th>Type of Waste</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal Solid waste</td>
<td>3,500 tons/day</td>
</tr>
<tr>
<td>Construction waste</td>
<td>1,400 tons/day</td>
</tr>
<tr>
<td>Industrial waste</td>
<td>150 tons/day</td>
</tr>
<tr>
<td>Hospital waste</td>
<td>7,0 tons/day</td>
</tr>
<tr>
<td>Sludge</td>
<td>500 tons/day</td>
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</tbody>
</table>
### Domestic Solid Waste Composition in Hanoi

<table>
<thead>
<tr>
<th>Waste Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic waste</td>
<td>41.98%</td>
</tr>
<tr>
<td>Paper</td>
<td>5.27%</td>
</tr>
<tr>
<td>Plastic, rubber</td>
<td>7.19%</td>
</tr>
<tr>
<td>Wool, clothes</td>
<td>1.75%</td>
</tr>
<tr>
<td>Glass</td>
<td>1.42%</td>
</tr>
<tr>
<td>Stone, clay, china</td>
<td>6.89%</td>
</tr>
<tr>
<td>Bone, shell</td>
<td>1.27%</td>
</tr>
<tr>
<td>Metal</td>
<td>0.59%</td>
</tr>
<tr>
<td>Mixture (10 mm)</td>
<td>33.67%</td>
</tr>
</tbody>
</table>

**Total:** 100%

**Average waste humidity:** 40.1%

**Waste density:** 0.380
Present and Future Image of Hanoi City

Population: 3 mil. (Source: JICA Study)

Population: 4.5 mil.

2003

Nam Son Landfill Site
(Approx. 40km from City Center)

2020

Sound Material-Cycle Society!

Organic Waste: 30% Reduction

( Source: JICA Study )
Nam Son Landfill Site
(Approx. 40km from City Center)

**Life time: up to 2013**

Map of Hanoi City
PROJECT
IMPLEMENTATION SUPPORT FOR 3R INITIATIVE IN HANOI CITY
TO CONTRIBUTE TO THE DEVELOPMENT OF A SOUND MATERIAL-CYCLE SOCIETY

3R-HN
Launching Ceremony for implementation of 3R-HN Project in 18/3/2007
### Objective and outputs

<table>
<thead>
<tr>
<th>Overall Goal</th>
<th>“Sound Material-Cycle Society” will be established in Hanoi City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Purpose</td>
<td>Harmonized 3R system based on source separation programs of organic waste is ready to familiarize to whole area of Hanoi City.</td>
</tr>
</tbody>
</table>
| Outputs | 1. MSW collection condition in pilot project area(s) is improved through implementation of pilot project with source separation of organic waste and composting, and Action Plan to extend the whole area of Hanoi City is formulated.  
2. Awareness of residents in pilot project area(s) is raised through implementation of environmental educational activities on 3R under the spirit of “Mottainai”.  
3. Dissemination activity of the source separation programs of organic waste and the environmental education programs is implemented.  
4. A strategic paper for next steps to improve MSW collection system with source separation programs of organic waste is developed. |
Project’s components

- Source separation in model areas
- Recycling of organic waste into compost
- PR and Environmental Education activities
Source separation in model areas

- **Organic waste:**
- **Inorganic waste:**
- **Recyclable waste:**
# Waste collection system

<table>
<thead>
<tr>
<th>Items</th>
<th>Organic waste</th>
<th>Inorganic waste</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collection days</td>
<td>Everyday</td>
<td>Everyday</td>
</tr>
<tr>
<td>Collection time</td>
<td>18:00 – 20:30</td>
<td>18:00 – 20:30</td>
</tr>
<tr>
<td>Container’s color</td>
<td>Green</td>
<td>Orange</td>
</tr>
<tr>
<td>Collection point</td>
<td>Collection points in resident areas</td>
<td>Collection points in resident areas</td>
</tr>
</tbody>
</table>
3R-HN: Reduce, Reuse, Recycle

3 CATEGORIES OF SOURCE SEPARATION

- Inorganic waste: waste to landfill, can not be reused or recycled
- Recyclables: can, bottle, plastic, metal, ...
- Organic waste: left-over food, vegetables, fruit, ...

Farm → Vegetables & plants → Daily life

Cau Dien compost plant

Collect & transport waste

Collect & transport waste

Source separation

Organic waste

Recycle products

Craft villages

Junk shop

Recyclables

Inorganic waste

Collect & transport waste

Nam Son landfill

18 Cao Ba Quat, Ba Dinh, Ha Noi  Tel/Fax: 84-(4)7331561  http://www.3r-hn.vn
Recycling of organic waste in Hanoi

- Improvement of Cau Dien composting plant
- Compost demand expansion and securing
Composting Method

- Receiving Waste
  - Exclusive space in the existing receiving area
- Pretreatment
  - Existing pre-treatment line
- Fermentation
  - New exclusive pits. Aeration by wheel loader turning over
- Maturing
  - Exclusive space in the existing maturing area
- Refining
  - Existing refining line to be improved
- Packing
  - Exclusive bag showing the project purpose
Composting Process Flow

Figure 3.1-2 Process Flow Diagram
Some pictures of 3R-HN project’s compost in Exhibition of Agro-Viet 2007

Opening ceremony of Agro Viet 2007
3R-HN's booth
Draw lots to get rewards
Visitors from PCT (group leader)
Presentation of JET's leader
Agro Viet awarding ceremony
Countermeasures for getting better citizens awareness on 3Rs: PR activities and Environmental Education

(1) Publicity
(2) Planning and Implementation of the PR
(3) Partnership Building among Stakeholders on 3R
(4) Supporting Hanoi citizens’ 3R activities
Countermeasures for getting better citizens awareness on 3Rs: PR activities and Environmental Education

(5) Environmental Education
• 3R education program for schools
• 3R Awareness program for communities consists of:
  • Mobile Cinema (Mobile PR Team)
  • Cau Dien Environmental Education Center
Countermeasures taken for reducing disposable plastic bag: Eco-Bag Campaign

(1) Purpose
- To let residents in model project areas think more about benefits of using Eco-bag or the like
- To understand what they think of their ideal eco-bag for shopping

(2) Target
- All of the households in the model project area (3,741 households)
Countermeasures taken for reducing disposable plastic bag: Eco-Bag Campaign

(3) Activities
- 3R-HN delivered Eco-bags and explained the meaning of Eco-bags to all of the households directly through residential group meetings.
- 3R-HN presented the Eco-bag Campaign and Eco-bag itself several times to residential group leaders in the workshops and study tour.
- 3R-HN prepared and delivered the applications for Eco-bag to all of the households through residential group leaders. The applications have 2 parts.
  - Part I: Which do you like most of Eco-bag? What are benefits that ECO-BAG brings to you and the environment?
  - Part II: Draw design of the ideal Eco-bag that will go along with you for shopping, buying food etc.
- Awards
  - One 3R T-shirt and one set of 3 magnet badges
  - Fifty (50) excellent applicants in one ward can be awarded.
- Number of the applicants
  - 421 persons in PCT (24% of all households)
  - 625 persons in ND (34% of all households)
  - Total: 1046 applications
Examples of Eco-bag designs from contestants
Center for environment education in Cau Dien

PR tools

Function

To introduce, educate in 3R

3R Park at Cau Dien
Result of survey before and after implementing environmental education

- **Have you heard about 3R**
  - Yes, I have: 96%
  - No, I haven't: 25%
  - I don't remember: 1%

- **Awareness of 3R**
  - Know meaning Ecobag: 89% Before, 100% After
  - Know meaning Mottainai: 93% Before, 100% After
  - Aware of symbol colors of 3 waste kinds: 100% Before, 100% After
  - Can sing 3R stars song: 76% Before, 100% After

**Result of EE programs**
- 78% to 97% people: aware of the important of waste recycling
- 80% to 91% people aware of organic waste can be recycled into compost
- About 100% pupil: aware of discharge waste to street is bad habit
3R Stars meeting
Roles expected from Japan

• To continue technical assistance for 3R-HN phase 2.
• To dispatch Japanese experts to Hanoi for solid waste management consulting.
• To hold training programs in Japan for Vietnamese expert in the field of Solid waste management especially 3R.
• To exchange experiences in 3R promoting with Vietnamese side through seminars, workshops and other forms.
Thank you very much.